



Transformation in the digital era: Innovations for easier access to financial service

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ABSTRACT

Background: The rapid advancement of digital technology has driven transformation within Indonesia's financial sector, including Pegadaian, which provides financial access for low- to middle-income communities and MSMEs. Conventional services face limitations in accessibility, operational efficiency, and increased competition with fintech, making digitalization essential to enhance financial inclusion and maintain relevance in the digital era. This study analyzes Pegadaian's digital transformation through service innovations such as Pegadaian Digital Service (PDS), identifies factors influencing the accessibility of digital financial services, and evaluates its impact on financial inclusion, including opportunities and challenges. **Methods:** A qualitative approach was employed using library research, drawing on secondary data from scientific articles, Pegadaian annual reports, government regulations, and credible news sources. Content analysis was conducted through data reduction, data presentation, and conclusion drawing, supported by theoretical and source triangulation to ensure validity. **Findings:** Pegadaian's digital transformation through PDS and Pegadaian Syariah Digital has enhanced transaction efficiency, expanded service reach, reduced geographical barriers, and encouraged interest in digital gold investment and digital financial service adoption. Integration of Pegadaian into the BRI Group has strengthened financial inclusion and operational efficiency, although challenges remain, such as uneven digital literacy, infrastructure limitations, cybersecurity risks, and the need for improved application performance. **Conclusion:** Pegadaian's digital transformation has improved service quality and financial access, particularly for younger generations and MSME players. However, technology optimization, customer education, and reinforced security systems are needed to ensure the sustainability of competitive and inclusive digital services. **Novelty/Originality of this article:** This study provides a multidimensional analysis of Pegadaian's transformation from the perspectives of digital innovation, user trust and perceived risk, integration within the ultra-micro financial ecosystem, and its contribution to enhancing financial inclusion, areas that have not been extensively examined in a holistic manner in prior research.

KEYWORDS: digital financial services; digital transformation; financial inclusion; Pegadaian.

1. Introduction

Rapid developments in digital technology have changed the global economic landscape and encouraged various industrial sectors, including financial services in Indonesia, to

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adapt quickly (Jange et al., 2024). This phenomenon is clearly seen in the increasing use of the internet and smart devices, which have significantly changed the patterns of public interaction with financial services (Ceasario & Fauzatul Laily Nisa, 2025). In Indonesia, internet penetration in 2024 has reached 79.5% of the total population (ANTARA News, 2024), while data from the Central Statistics Agency/ *Badan Pusat Statistik* (BPS) shows that 72.78% of the population has accessed the internet, confirming that digital connectivity is now a basic need for modern society (Badan Pusat Statistik, 2025). This condition accelerates the transition of society towards digital services such as digital banking, fintech, and electronic payments, which offer speed, convenience, and practicality in every transaction (Jange et al., 2024). These financial innovations also enable people in remote areas to gain access to financial services, including sharia services, through digital platforms such as electronic wallets, mobile banking, and sharia fintech applications (Ceasario & Fauzatul Laily Nisa, 2025). This shift in preferences has forced conventional and sharia financial institutions to continue innovating in order to meet consumer expectations for efficient, flexible, and accessible services (Kurniawan & Fauzatul Laily Nisa, 2024). This pressure inherently requires financial institutions to undergo a profound transformation of their operating models in order to remain competitive amid the onslaught of financial technology innovations (Engku Abdullah et al., 2025; Jange et al., 2024). Without progressive digital adoption, financial institutions face the risk of losing market share and relevance in the modern economic ecosystem (Kurniawan et al., 2021).

Therefore, comprehensive integration of digital solutions is a strategic step that not only improves operational efficiency but also expands service coverage, especially with the strengthening of the digital economy that continues to demand innovation in technology-based financial services (Istifadhoh et al., 2021). This has encouraged financial institutions to adopt financial technology (fintech) to improve their performance and innovation, in line with shifting consumer behavior that favors transparent and queue-free digital services (Tsakila et al., 2024). This transformation is also triggered by the emergence of various financial service innovations, particularly in the form of financial technology, which provides solutions to the constraints of traditional banks and financial institutions that are bound by strict regulations and limited reach (Muhammad & Sari, 2020). The emergence of FinTech has revolutionized the financial services sector, challenging traditional business models and setting new standards in the digital landscape (Engku Abdullah et al., 2025). This shift highlights the need for traditional financial institutions, including Pegadaian, to adapt in order to remain relevant amid fierce competition from digital-based financial service providers (Engku Abdullah et al., 2025). Therefore, digital transformation is not merely a strategic choice, but an evolutionary necessity for Pegadaian to maintain its existence and continue to serve the public effectively in this fast-paced digital era.

Changes in public behavior show a clear preference for services that are online, easily accessible, transparent, and do not require physical queuing, which fundamentally changes consumer expectations of their financial interactions (Jamal et al., 2023). This situation has led to fierce competition in the financial services sector, particularly with the emergence of various fintech companies and digital banks offering innovative solutions (Abubakar & Handayani, 2022). Pegadaian, as a long-established financial institution, is faced with the imperative to transform digitally in order to remain relevant and competitive in an increasingly dynamic market dominated by technology-based solutions (Andaru & Hadinugroho, 2024). This adaptation is crucial, considering that FinTech does not necessarily threaten the existence of financial institutions but demands that traditional institutions be prepared to face shifts in this sector (Engku Abdullah et al., 2025). This phenomenon requires Pegadaian to not only adopt technology, but also fundamentally change its operational strategies and business models to meet the demands of an ever-evolving market (Bhattacharjee et al., 2024). This transformation involves utilizing digital technology to optimize existing services and develop new products and services that meet the needs of a modern, digital society (Harsono & Suprpti, 2024). Fintech companies have changed the way Indonesians make payments, conduct transactions, and manage their daily finances, prompting institutions such as Pegadaian to adopt similar innovations (Alfie Faj'ri

et al., 2024). Awareness of changes in consumer behavior and developments in digital technology has prompted Pegadaian to launch various digital initiatives to expand its service reach and improve operational efficiency (Luthfi & Hati, 2025). This step is essential to ensure that Pegadaian can continue to serve segments of society that may be underserved by traditional banking services, while maintaining its position as a crucial provider of financial access (Fidhayanti et al., 2024). Thus, the digitalization of Pegadaian's services is not only a response to external pressures but also a proactive strategy to strengthen financial inclusion and expand its customer base in the modern era.

The role of Pegadaian in the national financial system is as a non-bank financial institution that provides fast, safe, and affordable access to funds, especially for the lower-middle class and Micro, Small, and Medium Enterprises (Luthfi & Hati, 2025). Historically, this institution has played a vital role in providing financial solutions for segments of society that may not have adequate access to formal banking services, while also supporting local economic growth through MSME financing. However, reliance on conventional face-to-face services presents a number of significant limitations, such as operational time restrictions, geographical distance, and long queues. These limitations inherently hamper operational efficiency and limit the reach of Pegadaian's services, making it less adaptive to the dynamics of modern society's needs, which increasingly prioritize speed and ease of access (Mulyati et al., 2020). In this case, digital transformation is a must for Pegadaian to overcome these obstacles and expand its capacity to serve a wider market segment (Tsakila et al., 2024; Adipurno, 2025). Digital transformation enables Pegadaian to develop more innovative products and services, as seen in the adoption of financial technology (fintech) in modern financial services, which includes digital payment and loan applications (Sari & Arifin, 2023). These innovations also include the development of mobile applications and online platforms that allow customers to access Pegadaian's services anytime and anywhere, as well as utilize data for product personalization. In addition, digitization enables increased operational efficiency through process automation, cost reduction, and improved transaction security. Neat and structured financial reports thanks to digitization also make it easier for micro businesses to gain access to financing from formal financial institutions such as Pegadaian (Nurfaedah et al., 2024).

However, conventional services that rely on the physical presence of customers to conduct transactions have posed a number of challenges, including relatively manual processes, lack of efficiency for people in remote areas, and limited flexibility in operating hours. These conditions make it difficult for many individuals and MSMEs to access finance, especially those living in rural areas or with limited mobility, and slow down the overall transaction process. In addition, Pegadaian also faces increasingly fierce competition from various financial innovators, such as "fintech lending" services that offer fast online loans, "e-commerce gold" platforms that facilitate digital gold investment, and digital wallets that are changing the way people make daily transactions (Octavini & Puspitasari, 2023). The demand for faster, easier, and more transparent services from modern society's is increasingly pressuring Pegadaian to adapt quickly by introducing innovative digital solutions.

In response to these challenges, Pegadaian has implemented various digital innovations to strengthen operational efficiency and expand service coverage, in line with increasing digital financial literacy among MSMEs to face a technology-based economy (Irdawati et al., 2025). One important innovation is the launch of the Pegadaian Digital Service, which allows customers to access pawn services online, register digitally, and track their transactions through an application-based platform (Luthfi & Hati, 2025). This innovation allows customers to conduct pawn transactions without having to visit a branch office, as well as providing easy access to real-time information on Pegadaian's products and services (Luthfi & Hati, 2025). In addition, the development of digital gold savings and the Pegadaian marketplace also contributes to expanding investment options and connecting bidders with borrowers through a digital platform. Furthermore, these innovations are also supported by the adoption of cashless payments and integration with various e-wallets, which simplify the payment process and significantly enhance the user

experience. These innovations are Pegadaian's strategic response to shifting consumer preferences and market dynamics driven by technological advances, aiming to remain relevant and competitive amid the emergence of various other digital platforms offering digital gold investments, such as Treasury, Lakuemas, Pluang, Sakumas, as well as e-commerce platforms like Tokopedia and Shopee (Tamara et al., 2023). This transformation reflects Pegadaian's commitment to continuously adapt to technological changes and community needs, while strengthening its position as an innovative and inclusive financial institution (Luthfi & Hati, 2025).

The government, through Bappebti, has also recognized and regulated digital gold investment as a legal and legally protected instrument, demonstrating its support for such innovations in the financial ecosystem. This shows that the digital gold investment market is maturing and gaining public trust (Tamara et al., 2023). However, the success of this digital innovation implementation still needs to be further tested from the perspective of user acceptance and its impact on overall financial inclusion, especially in the context of public digital literacy. Therefore, this study will analyze the extent to which Pegadaian's digital transformation has succeeded in improving the accessibility and convenience of financial services for the public, identify key factors that influence the adoption of these digital innovations, and the opportunities and challenges that arise from this process. Despite the growing body of research on digital financial services, limited studies comprehensively examine Pegadaian's transformation from a multidimensional perspective integrating innovation, trust, and financial inclusion. Therefore, this study addresses how Pegadaian's digital transformation improves financial accessibility, what factors influence the adoption of digital services, and what opportunities and challenges emerge from the implementation of these services.

2. Methods

2.1 Research design and data sources

This study uses a qualitative research method with a literature study approach, which is research that utilizes written sources as objects of study without collecting field data (Zed, 2008), in line with Creswell, (2014) view that document analysis is an integral component of qualitative research. The research focuses on three main aspects: Pegadaian's digital innovation, the accessibility of digital services, and the impact of digitalization on financial inclusion in society. There is no specific physical research location (non-physical site), as all processes are conducted digitally through access to academic literature and official documents, while the research period spans from October to December 2025. The data sources consist of secondary documents, including scholarly articles, Pegadaian's annual reports, government regulations, and credible news articles (Sugiyono, 2022).

2.2 Research instrument and data collection

The researcher serves as the primary research instrument responsible for interpreting the data, supported by non-human instruments such as literature review sheets and coding matrices (Sugiyono, 2022). Data collection techniques are carried out through systematic documentation studies and literature searches using scientific repositories and official publications, as emphasized by Creswell (2014), who states that documentation is a valid technique in qualitative inquiry. The literature selection applied inclusion criteria: publications from 2015–2025, relevance to digital finance, and credible sources.

2.3 Data analysis and validity

The data were analyzed using content analysis, following the stages of data reduction, data display, and conclusion drawing based on the Miles & Huberman (2014) model. Data were analyzed through coding, categorization, and thematic synthesis. To ensure data

validity, theory and source triangulation were applied by comparing various literature to obtain information consistency (Lincoln & Guba, 2020).

3. Results and Discussion

3.1 Profile of Pegadaian and changes in public behaviour in the digital era

The history of Pegadaian in Indonesia dates back to the Dutch colonial period with the establishment of Bank Van Leening during the era of the VOC (Verenigde Oost Indische Compagnie), which provided cash loans secured by valuable assets. The formalization of this institution was recorded in Staatblad 1901 No. 131 on April 1, 1901, marking the founding of the official Pegadaian office as a governmental institution (Hariss, 2020). Since then, Pegadaian has undergone various institutional transformations, starting with its status as a State Company under Law No. 19 of 1960 and Government Regulation No. 178 of 1961, later becoming a Public Service Agency (Perjan) in 1969 under Government Regulation No. 7 of 1969 and Law No. 9 of 1969, then upgraded to a Public Corporation/ *Perusahaan Umum* (Perum) in 1990 through Government Regulation No. 10 of 1990, and eventually transformed into PT Pegadaian (Persero) as a State-Owned Enterprise (SOE) (Soleh & Wijayanti, 2021; Hariss, 2020). Pegadaian's core mission includes supporting government economic programs, preventing illegal pawn practices and loan-sharking activities, and helping communities, especially low to middle income groups, access quick funds. Over time, Pegadaian has transformed from a traditional pawnshop system into a broader financial institution that offers fiduciary services, investments, logistics, safekeeping, and precious metal trading (Abubakar, 2012). The company has also expanded its portfolio into sharia-based financial services to meet market demand and Islamic financial principles, offering products such as gold pawning, ARRUM financing, and MULIA financing (Hariati, 2024).

These findings indicate that Pegadaian's development has progressed gradually in response to Indonesia's socioeconomic changes. The institutional transformation from a traditional model to a limited liability company reflects its strategic adaptation to regulatory dynamics and the increasingly complex needs of society. The expansion of Pegadaian's mission and services demonstrates efforts to shift from merely providing fast loans to becoming a non-bank financial institution focused on national financial inclusion. Additionally, the development of sharia-compliant products highlights Pegadaian's adaptation to the growing preference among Muslim communities for Islamic financial services, while simultaneously expanding its market segment.

Pegadaian is a non-bank financial institution (NBFI) that functions as a financial intermediary and is owned and managed by the government through a State-Owned Enterprise (SOE) (Islami et al., 2021). Within Indonesia's financial system, Pegadaian is categorized alongside other non-bank financial institutions, including insurance companies, securities firms, and financing institutions (Qiblati, 2021). As an NBFI, its primary function is to provide collateral-based financing, with official authorization to distribute funds to the public under pawn law (Lubaba, 2020). Its simple procedures enable Pegadaian to serve a wide range of communities, particularly low- to middle-income groups (Hasrul et al., 2024). Unlike banks, Pegadaian operates with limited intermediation functions. The institution can extend loans to individuals in need, but it is not permitted to collect public funds such as savings or deposits (Ulidamn, 2019). Nevertheless, Pegadaian continues to distribute funds to the public in the form of credit (Ulum, 2019). Operationally, Pegadaian manages two systems: conventional and sharia-based. In the sharia system, the institution does not apply interest (*riba*), but instead charges collateral maintenance fees using an *ijarah* contract as compensation for services related to asset upkeep. One of Pegadaian's key priorities is short-term financing, such as sharia gold pawning, designed to help customers obtain quick funds through easy procedures (Yudha et al., 2023). From a socio-economic perspective, sharia-based Pegadaian aims to prevent illegal practices such as loan-sharking, informal pawning, *riba*, and predatory lending (Ulum, 2019). The institution also contributes to improving community welfare by providing accessible financing for individuals who require

immediate funds for consumption or business production needs (Yudha et al., 2023). Pegadaian's advantages as an NBFIs include its accessibility through fast and simple procedures, flexibility in serving diverse social groups, compliance with clear regulations issued by the Financial Services Authority (OJK) (Islami et al., 2021), and its role as a financing alternative for people who are underserved by conventional banking.

Its dual operations, conventional and sharia, reflect Pegadaian's adaptation to customer preferences, particularly the increasing demand for sharia compliant financial services. The application of *ijarah* in the sharia system demonstrates Pegadaian's commitment not only to complying with Islamic financial principles but also to strengthening public trust in interest free financing. From a social standpoint, Pegadaian's success in reducing illegal practices such as loan sharking and underground pawning highlights its significant role in ensuring a secure and affordable financing ecosystem. With its strengths in accessibility and regulatory compliance, Pegadaian serves as a bridge between public financing needs and the stability of the national financial system while strengthening financial inclusion among segments not reached by conventional banks.

Public behavior toward Pegadaian's services has undergone a complex transformation in line with the growth of digital services. This shift is driven by several significant influencing factors. Atieq & Azizah, (2022) identified perceived usefulness and ease of use as the main drivers, contributing 19.3% to customers' interest in adopting digital services. Customers who experience benefits such as time savings (mean score 4.51) and transaction efficiency, particularly during the pandemic, tend to shift toward digital platforms. This transformation is also supported by Pegadaian's own strategy. According to Rivansky (2020), the institution has begun moving away from expanding physical branches and is instead prioritizing the development of Pegadaian Digital Service, a digital financial service innovation. In terms of behavioral characteristics, Mala (2021) found that customers demonstrate a dual preference: although online systems are considered effective, some still use manual services but prefer digital transactions due to their time efficiency. Manual services typically require 30–60 minutes with five steps and two queues, whereas digital services only take 10–20 minutes with one queue. This is reinforced by Manik et al. (2023), who emphasized that the Pegadaian Digital Service application enhances transaction effectiveness and service delivery by enabling customers to pawn items, redeem pawned goods, and access other Pegadaian products through the app. However, digital service adoption also presents challenges. Safitri & Wati (2023) identified several obstacles, including reliance on stable internet networks, limited internet access in certain regions, varying levels of customers' technology literacy, cybersecurity risks, and the relatively low application rating (2.8 on Google Play). Mala (2021) further noted that insufficient socialization and user education from Pegadaian pose barriers, particularly for customers aged over 30 who are less familiar with smartphone technology. On the other hand, the benefits of digital services are clearly recognized. Studies by Siregar & Wulandari (2022) and Putri & Supriadi, (2022) indicate that digital services have a positive impact on customer satisfaction, enabling transactions without visiting physical outlets and providing greater flexibility in time and accessibility.

These findings show that Pegadaian's digitalization has effectively responded to public demands for fast, efficient, and flexible services. Changes in customer behavior have been driven by increasing expectations for convenience and effectiveness, especially during situations such as the pandemic that accelerated technological adoption. The significant time efficiency between digital and manual services serves as a strong rationale for this shift in customer preference. Nevertheless, barriers such as limited internet access, low digital literacy, and inadequate education indicate that the digital transformation still requires stronger support strategies, including user training, application quality improvement, and enhanced digital infrastructure. Public behavior toward Pegadaian's digital services is dualistic: while there is a strong push toward digitalization, structural and educational adjustments are still needed to increase adoption more evenly across customer groups.

The challenges faced by conventional Pegadaian services prior to digitalization can be comprehensively explained. Before the digital era, PT Pegadaian expanded services by increasing the number of physical branches to reach more customers (Rivansky, 2020). However, this traditional model presented several fundamental challenges. First, limited geographic accessibility created significant obstacles, as customers were required to visit physical outlets to conduct transactions. As a result, service coverage was restricted to areas with available branches, making it difficult to reach remote or low-population regions. Second, operational inefficiencies were evident in time-consuming manual processes, long queues at major branches, and high dependence on the physical presence of both staff and customers. Third, limited human resources posed a crucial internal challenge. Staff capacity to serve high customer volumes was constrained, requiring continuous training and creating reliance on the individual skills of employees. Fourth, a narrow public perception persisted, where Pegadaian was viewed predominantly as a place for pawning gold, leading to low awareness of other services comparable to modern banking facilities. Fifth, Pegadaian faced increasing competitive pressures from more technologically advanced financial institutions. This included difficulties in keeping up with financial technology (fintech) advancements and maintaining a strong market position in a highly competitive environment. Sixth, limited information access and transparency hindered customers from receiving real-time product information, while verification processes took considerable time, and 24/7 service availability was nonexistent. To address these challenges, PT Pegadaian implemented digital transformation by introducing products and services such as Pegadaian Digital Service (PDS) to enhance competitiveness, capacity, and service quality (Pebiyanti et al., 2024). This transformation serves as a strategic response to technological disruption that demands faster, more efficient, accurate, and accessible services anytime and anywhere.

These conventional challenges emphasize the urgency of digitalization in the pawn industry to maintain relevance and improve service quality for the public. Based on these findings, it is evident that conventional Pegadaian services faced structural barriers that could not be sustained in the context of financial technology development. Limited physical access and inefficient manual processes indicated that the traditional system was unable to meet the needs of modern society, which demands fast and flexible services. Moreover, constraints related to human resources and suboptimal public perception highlight the need for more aggressive communication and educational strategies to broaden public understanding of Pegadaian's service offerings. Competitive challenges further reinforce the necessity for innovation, as fintech and digital banking provide more practical alternatives. Additionally, limited transparency before digitalization reveals the importance of adopting technology to strengthen customer trust and convenience. Therefore, digital transformation through PDS stands as a strategic and inevitable step to enhance service reliability, accelerate transactions, expand market reach, and ensure Pegadaian remains relevant in the modern financial ecosystem.

3.2 Pegadaian's digital innovations

Pegadaian has undergone a significant transformation from a conventional pawn-based institution into a digitally integrated financial service provider. In the early 2000s, the company primarily focused on expanding its physical branch network. However, with the rapid advancement of financial technology (fintech), Pegadaian shifted toward digitalization through the launch of Pegadaian Digital Service (PDS), a web- and mobile-based application that enables customers to conduct transactions without visiting physical outlets (Rivansky, 2020; Putri & Supriadi, 2022). Since its launch in 2019, PDS has provided various integrated services, including gold investment, pawn services, financing, and bill payments, offering efficiency, real-time access, and convenience (Mala, 2021).

Table 1. Pegadaian digital services and impact

Digital service	Features	Impact on users	Contribution to financial inclusion
Pegadaian Digital Service (PDS)	Online pawn, gold savings, bill payments	Faster and more efficient transactions	Increased accessibility to financial services
Pegadaian Syariah Digital	Sharia-compliant financing and services	Increased trust among Muslim users	Inclusive financial services
Digital Gold	Online gold investment starting from low value	Easier and affordable investment	Improved financial literacy
Tring! App	Integrated multi-service platform	One-stop financial convenience	Broader user adoption

To strengthen its digital ecosystem, Pegadaian also introduced Pegadaian Syariah Digital in 2018, which offers Sharia-compliant services such as *rahn*, gold savings, and Islamic financing (Safitri & Wati, 2023). Furthermore, Pegadaian continued its digital evolution by launching Tring! by Pegadaian, an integrated platform based on the concept of “1 User ID, All Needs,” which consolidates all financial services into a single system. These innovations demonstrate Pegadaian’s strategic effort to create a comprehensive and inclusive digital financial ecosystem that accommodates diverse customer needs.

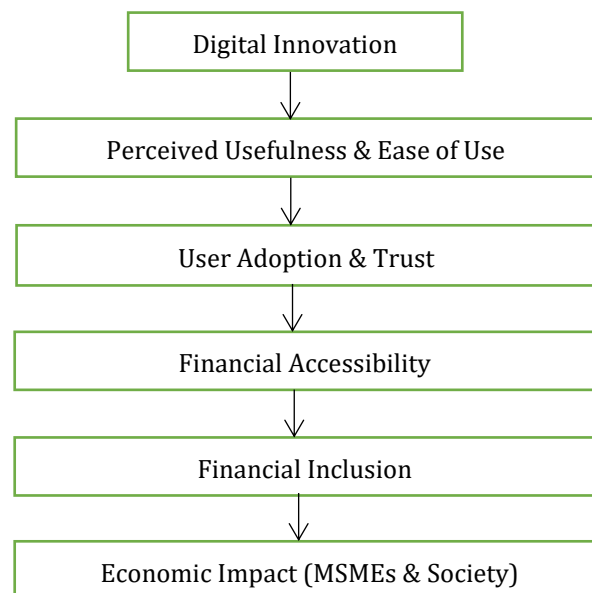


Fig. 1. Conceptual framework

However, several challenges persist, including limited digital infrastructure, uneven digital literacy—especially among older users—technical system issues, and the need for broader public education regarding digital services. From a behavioral perspective, risk perception and customer trust are critical determinants of digital service adoption. High perceived risk, particularly related to data security and system reliability, tends to reduce customer trust and usage intention (Kurnianingsih & Hidayat, 2021; Jayantari & Seminari, 2018). Conversely, trust acts as a key mediating factor that strengthens user adoption when supported by secure systems, transparent processes, and reliable service performance (Judijanto et al., 2024). Therefore, enhancing cybersecurity, improving system transparency, and expanding customer education are essential strategies to reduce perceived risk and increase adoption. In addition, user adoption varies across demographic groups. Younger users tend to adapt more quickly to digital services and experience higher satisfaction due to efficiency and convenience, while older users often face difficulties due to limited digital literacy and security concerns (Siregar & Nasution, 2023; Dolle et al., 2025).

This indicates the importance of inclusive digital strategies that address the needs of different user segments. Pegadaian's digital innovation is further strengthened through its integration into the BRI Group under the Ultra Micro Holdings (UMi) initiative. This integration enhances operational efficiency, expands customer reach, and supports financial inclusion through digital service integration and shared infrastructure (Nathaniel & Aprianingsih, 2023). The synergy between institutions has successfully expanded access to financial services for millions of ultra-micro customers, although challenges such as organizational adaptation, infrastructure investment, and competition with fintech companies remain. Moreover, the integration of digital gold services into cashless payment systems represents a significant advancement in financial innovation. This system combines investment and payment functionalities, supported by secure transaction mechanisms and, in some cases, Sharia-compliant contracts. The adoption of such systems is strongly influenced by digital literacy and perceived ease of use, highlighting the importance of continuous education and user-friendly technology (Hidayat et al., 2024).

Finally, cybersecurity plays a crucial role in sustaining digital innovation. The increasing complexity of cyber threats requires a comprehensive approach involving regulatory compliance, technological protection, human resource development, and operational governance. The implementation of security measures such as encryption, real-time monitoring, regular audits, and disaster recovery systems is essential to ensure system reliability and protect user data (Triharto et al., 2023). Collaboration among stakeholders—including government, financial institutions, and society—is also necessary to build a resilient digital financial ecosystem. Overall, Pegadaian's digital innovations represent a strategic response to technological advancements and changing customer behavior. These innovations not only improve service efficiency and accessibility but also promote financial inclusion and economic development. However, the sustainability of this transformation depends on continuous improvements in technology, user education, infrastructure, and cybersecurity to ensure that digital financial services can be accessed safely and equitably by all segments of society.

3.3 The impact of Pegadaian's digital transformation on financial access

Pegadaian's digital transformation has had a significant impact on financial access for the Indonesian population, marking a fundamental shift from a traditional financial institution to a digital financial company through the launch of the Pegadaian Digital Service (PDS) application, which has successfully expanded its target market to include the millennial generation (Putri & Supriadi, 2022; Rivansky, 2020). This transformation responds to intense competition within the financial services industry and rapid technological advancements that drive innovation and dramatically increase the accessibility of financial services, as customers are now able to conduct transactions without visiting physical branches, overcoming geographic and time-related barriers (Putri & Supriadi, 2022; Ambari et al., 2024). Online systems have proven to be effective for customers who need to transact anywhere and anytime, reducing service time from 30–60 minutes manually to only 10–20 minutes digitally, and even 1–5 minutes for certain financing services (Mala, 2021). From an operational perspective, the PDS application enhances employee efficiency in handling digital transactions and provides convenience for customers across various services, including gold savings accounts, gold installment plans, and pawn payment services, although improvements in facilities are still needed to enhance service quality (Manik et al., 2023; Azmi & Dharma, 2024). Digital transformation also enables service diversification within a single platform, including gold services (buying, selling, transferring, and printing gold), pawn services (booking service, pawn using gold savings), financing (multipurpose, hajj financing), and various bill payments and top-up services (Putri & Supriadi, 2022). However, its implementation still faces challenges, such as limited public awareness of the new system, network disruptions, low digital literacy, especially among the elderly, and customer concerns regarding online transaction security.

(Mala, 2021; Putri & Supriadi, 2022). In the context of Islamic finance, digital transformation further improves operational efficiency, product innovation, and accessibility of financial services for Muslim communities, with financial inclusion identified as the most influential factor in enhancing access to financing (Trimulyana, 2024; Rachmawati et al., 2024).

These findings demonstrate that digital transformation enhances financial inclusion and the efficiency of Pegadaian's services, while also supporting product diversification and service innovation. Reduced transaction times and improved accessibility strengthen Pegadaian's competitive position within the financial services industry and better accommodate the needs of modern customers. Challenges such as digital literacy gaps and transaction security concerns highlight the importance of customer education, improved technological infrastructure, and comprehensive dissemination of information. Additionally, the digital transformation of Islamic services reinforces financial inclusion among Muslim communities, showing that digitalization can simultaneously increase operational effectiveness, financing accessibility, and the overall growth of financial inclusion.

Digital Pegadaian's support for micro, small, and medium enterprises (MSMEs) can be understood within the broader context of digital financial inclusion and MSME digital transformation—an increasingly relevant topic, especially after the COVID-19 pandemic, which caused major social and economic disruptions. MSMEs were the most affected sector, with Statistics Indonesia (BPS) reporting that 84.20% experienced revenue declines, and the accommodation and food service sector reaching as high as 92.47% (Sailendra & Djaddang, 2022). This situation has driven MSMEs to shift from conventional business practices toward digital adoption. Digital financial inclusion provides comprehensive benefits for MSMEs, including transaction efficiency and improved record-keeping that can be monitored in real time, eliminating the need for double-entry recording as seen in cash-based systems. The use of digital accounting applications such as BukuKas, SI APIK, and Buku Kas AKPHB enables better financial accuracy and transparency (Ekaputra & Apriani, 2025). Additionally, access to funding becomes easier because banks and financial institutions require systematic transaction records as part of their lending criteria, and digital systems can provide the necessary documentation to obtain credit or financial assistance. Digital transformation also expands market access for MSMEs by targeting tech-adaptive generations such as Millennials and Gen Z, and by enabling opportunities to reach international markets through e-commerce platforms. The integration of digital payment systems within the Pegadaian Digital Service platform enhances MSME confidence when conducting transactions in broader markets, offering greater legitimacy compared to traditional methods. Quantitative evidence shows that the adoption of digital technology can reduce operational costs by 20%, increase average revenue by 35%, and improve operational efficiency significantly (Godwin et al., 2024). However, several challenges remain, including limited digital literacy among MSME operators, inadequate technological infrastructure, the continued dominance of manual bookkeeping, and low knowledge of accounting practices (Ekaputra & Apriani, 2025). These issues require solutions such as continuous digital literacy training and mentorship (Sitorus et al., 2025), collaboration between government, private sector, and academia, accessible digital platforms, and the development of an inclusive and sustainable digital ecosystem. Successful implementation demands synergy among stakeholders: the government must provide adaptive and responsive regulations (Arbani, 2025), financial institutions should design products and services tailored to MSME needs, academics can offer technical training and mentoring, and the private sector must deliver user-friendly digital platforms (Sailendra & Djaddang, 2022).

Overall, digitalization through Pegadaian services has a positive impact on MSMEs, improving operational efficiency while expanding access to financing and market opportunities. Digital transformation enables MSMEs to be more adaptive to post-pandemic economic challenges, strengthens financial transparency, and builds trust with customers and business partners. The remaining gaps in digital literacy and infrastructure highlight the importance of synergistic strategies among stakeholders through training, supportive policies, and accessible technology. A collaborative approach is essential to ensure the

sustainability of MSME digitalization and to maximize economic growth potential through digital transformation.

The digital era presents strategic opportunities for Pegadaian to transform its traditional business model into a more modern, inclusive, and competitive financial service provider. The launch of the Pegadaian Digital Service (PDS) marks a significant milestone that demonstrates the company's readiness to embrace digital financial services while expanding its market reach to technology-savvy millennials (Putri & Supriadi, 2022; Safitri & Wati, 2023). By enabling transactions anytime and anywhere, digital services allow Pegadaian to enhance operational efficiency for both the company and its customers, reducing wait times, minimizing physical queues, and offering a more convenient service experience than conventional methods (Manik et al., 2023). The PDS application also strengthens Pegadaian's competitive advantage through its comprehensive features, including gold savings, online pawn services, bill payments, mobile credit purchases, and real-time gold price information—helping customers make more informed financial decisions (Putri & Supriadi, 2022; Safitri & Wati, 2023). Nevertheless, several challenges persist, such as limited internet access, low digital literacy particularly among elderly customers, application quality issues, and the growing need for stronger cybersecurity protections (Mala, 2021; Safitri & Wati, 2023). These challenges, however, simultaneously open opportunities for improvement, such as technology infrastructure optimization, enhanced user experience design, and community-wide digital education. Furthermore, the digital era provides space for Pegadaian to strengthen market penetration, develop innovative financial products, and leverage data analytics to better understand customer preferences. The COVID-19 pandemic acted as a major accelerator of digital adoption, evidenced by increased usage of PDS during 2019–2020 (Simanjuntak, 2022).

These findings emphasize that the digital era offers strategic opportunities for Pegadaian to enhance its competitive position, promote financial inclusion, and leverage technology to deliver more personalized customer experiences. Challenges related to internet accessibility, digital literacy gaps, application performance, and cybersecurity underscore the need for continuous infrastructure enhancements, improved user experience development, and reinforced digital education initiatives. Overall, digital transformation not only improves operational efficiency but also enables Pegadaian to innovate its products, expand market outreach, and strengthen customer loyalty through services that are more responsive and adaptive to modern financial needs.

The challenges faced by Pegadaian in the digital era encompass interconnected internal, external, and strategic aspects that influence the effectiveness of its digital transformation. Internally, Pegadaian continues to encounter limitations in developing human resources capable of adapting to new technologies, as the shift from conventional to digital services requires higher technical competencies and employee readiness to support digital-based customer services (Pebiyanti et al., 2024). In addition, technology infrastructure must be strengthened due to recurring issues such as delayed transactions and the slow updating of balances in the application, indicating the need for enhanced backend systems and information technology management (Putri & Supriadi, 2022). The complexity of features within the Pegadaian Digital Service (PDS), which includes gold services, pawn services, financing, and various digital payments, also demands intensive system maintenance and continuous employee training to ensure optimal service delivery. Externally, low digital literacy among the public remains a significant barrier, as many customers are either unaware of the PDS application or do not understand how to use it, and still perceive Pegadaian primarily as a traditional pawn institution (Pebiyanti et al., 2024). Behavioral resistance is also evident, as some customers worry about the security of digital transactions and prefer conducting activities directly at physical outlets (Putri & Supriadi, 2022). Another challenge lies in the low public awareness of the wide range of services offered digitally, indicating communication gaps between the company and its customers. Strategically, Pegadaian faces intensifying cross-industry competition not only from other pawn institutions but also from fintech companies and digital platforms offering fast and flexible financial services (Pebiyanti et al., 2024). Furthermore, the transition from a state-

owned enterprise with conventional service characteristics to a modern financial company requires deep restructuring of work culture, business processes, and organizational structure (Putri & Supriadi, 2022).

In an era of rapid technological disruption that shifts public expectations toward financial services that are fast, efficient, and accessible anytime and anywhere, Pegadaian must continue improving its technological capacity, the quality of its digital services, and customer education to retain competitiveness. These challenges underscore the importance of a holistic approach in Pegadaian's digital transformation. Strengthening competent human resources, upgrading technology infrastructure, and ensuring continuous application development are essential for the optimal functioning of digital services. Externally, improving digital literacy through effective communication and educational programs will enable customers to fully utilize the PDS platform. Strategic strengthening requires alignment of work culture, business processes, and organizational structure with the characteristics of modern financial institutions, while maintaining seamless integration between digital and physical service channels. Therefore, addressing internal, external, and strategic challenges in an integrated manner will support Pegadaian's sustainable digital transformation, enhance its competitiveness, and expand financial inclusion across Indonesian society.

4. Conclusions

Based on the findings, the transformation of Pegadaian from a traditional financing institution into a digital financial company demonstrates a significant adaptation to regulatory requirements, public needs, and socio-economic developments. The digitalization of services through Pegadaian Digital Service (PDS) and Pegadaian Syariah Digital has enhanced efficiency, accessibility, and service flexibility, while also encouraging changes in consumer behavior—particularly among millennials who prefer fast and practical online transactions. Product and service innovations, including digital gold transactions and Sharia-based financing, have successfully increased investment interest, operational efficiency, and customer satisfaction, supported by cashless technology, IoT-based system integration, and strong digital security. Moreover, Pegadaian's integration into the BRI Group through the Ultra Micro Holding has expanded financial inclusion and improved operational efficiency, although internal and external challenges remain. Strengthening cybersecurity and digital gold information systems is crucial to maintaining customer trust, requiring a multidimensional approach involving regulation, technology, human resources, and operational procedures to minimize risks and ensure digital service sustainability. This study is limited by reliance on secondary data. Future research should use quantitative or mixed methods for validation.

To ensure the sustainability of this digital transformation, Pegadaian is advised to enhance customer digital literacy—particularly among individuals aged 40 and above—through training programs, application tutorials, and socialization campaigns. The institution should further strengthen technological infrastructure and PDS application features to enable comprehensive service accessibility. Enhancing security and transparency of digital transactions—through encryption, multi-layer verification, and real-time monitoring—must also be prioritized. Additionally, stronger collaboration within the BRI Group is needed to improve system integration, customer data management, product innovation, and risk management adaptation. Continuous monitoring and evaluation of digital service effectiveness, customer behavior, and operational risks are essential to ensure Pegadaian remains relevant, secure, and competitive in the fintech era.

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Author Contribution

The authors contributed to the data acquisition, analysis, and interpretation in this study. Conceptualization: F. R., H. M., and H.; Methodology: F. R., H. M., and H.; Data Curation: F. R., H. M., and H.; Writing – Original Draft Preparation: F. R., H. M., and H.; Writing – Review & Editing: F. R., H. M., and H.

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The authors declare no conflict of interest.

Declaration of Generative AI Use

During the preparation of this work, the authors used ChatGPT (OpenAI) to assist in improving the grammar, clarity, academic writing style, and language quality of the manuscript. After using this tool, the authors carefully reviewed and edited the content as needed and took full responsibility for the accuracy, originality, and integrity of the final manuscript.

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